

REMARKS

In the Office Action of September 20, 2005, the Examiner rejected claims 1-4, 7, 8, 11-16, 19-22, and 25 under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,125,621 to Parsons. The Examiner also rejected claims 5, 6, 17, and 18 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,125,621 in view of U.S. Patent 6,243,885 to Lopez-Torres. Applicants respectfully disagree with these rejections for the reasons explained below.

The present invention as claimed in claims 1 and 13 is directed to an automatic toilet room flush valve, comprising a valve body, a valve member, an external cover, and a vent passage. The valve body including an inlet and an outlet and a valve seat located inside the body. The valve member is cooperatively arranged with the valve seat for controlling water flow between the inlet and the outlet, wherein the movement of the valve member between open and closed positions is controlled by water pressure inside a pilot chamber. The pilot chamber is in communication with a relief passage designed to be opened or closed by an actuator thereby controlling the water pressure inside the pilot chamber. The external cover defines a cavity designed for enclosing a battery, a sensor and the actuator for controlling operation of the flush valve. The vent passage is designed for venting water from inside to outside of the cavity defined by the external cover.

That is, the claimed flusher includes two different passages designed for different purposes, i.e., a relief passage designed together with an actuator for controlling the water pressure inside the pilot chamber, and vent passage designed for venting water from inside to outside of the cavity defined by the external cover. In the pending specification, the design and operation of one possible embodiment of the vent passage is described on page 13 line 23 through page 14 line 5.

Importantly, U.S. Patent 5,125,621 does not disclose both the vent passage and the relief passages but only the relief passage. Specifically, in col. 5, lines 6 through col. 6 lines 26, U.S. Patent 5,125,621 discloses the following:

Simultaneous reference to FIGS. 3 and 4 reveals that the replacement apparatus so includes a cylindrical sleeve 52 as well as a nut 54 rotatably mounted on the lower end of the sleeve 52 and including threads 56 for threadably securing the replacement apparatus to the body in a manner the same as that in which the original housing 14 was secured to it.

Mounted in the sleeve 52 are a latching solenoid operator 58 and a circuit board 60 containing control circuitry that controls the operator 58. Circuitry 60 also operates a sensor in the form of an ultrasonic transducer assembly 62. The transducer assembly 62 is oriented to transmit ultrasonic signals through an opening 64 in the sleeve 52, and the sleeve can be held stationary with the transducer assembly 62 pointed in the proper direction while the nut 54 is rotated to secure the assembly to the body 12.

The partition base 78 includes a flexible, generally frustoconical upper portion 86 extending from the replacement cap 68 to a generally planar portion 88, which seats on the upper surface of the diaphragm 24 in such a manner as to close and is centered on the relief opening 36. Although FIG. 4 depicts the bottom surface of planar portion 88 as being strictly horizontal, it and corresponding elements of embodiments described below may be angled upward, as the lower surface of the discarded pilot valve member 38 is. In the illustrated embodiment, the frustoconical upper portion 86 and planar lower portion 88 are provided as separate pieces, which are secured to each other by a retainer 89 threadedly secured to the planar portion 88.

The upper portion 86 is preferably resilient so as to keep the planar portion 88 in its seat, but a separate spring may instead be used for that purpose. The generally planar portion 88 forms a partition-member opening 92.

Together, the partition base 76 and the central section of the replacement cap 68 form a partition that defines a relief passage or chamber 94 and separates it from the pilot chamber 26. The partition ordinarily prevents flow from the pilot chamber 26 through the relief opening 36 to the outlet line 18. In other words, although the planar portion 88 of the partition base is unlike the pilot valve member 38 in that it has an opening 92 through it, it still prevents from the pilot chamber 26 to the outlet line 18 because of the presence of the remainder of the partition.

The frustoconical portion 86 of the partition base is flexible so as to permit the pilot valve portion 88 to move with the motion of the main diaphragm 24 and thus allow diaphragm 24 to operate normally. For the purposes of the illustrated embodiment, the planar partition portion 88 does not additionally need to move with respect to the diaphragm 24, as the pilot-valve member 38 of the conventional manual system does; indeed, in a version of the invention in which the main diaphragm is additionally replaced, the partition 76 could be formed integral with the main diaphragm. The communication between the pilot chamber

26 and the outlet line 18 required to open the valve is not provided by movement of the planar portion with respect to the diaphragm 24 to permit flow around it. That communication occurs instead by flow through a pilot passage comprising openings 96 and 98 in the replacement cap 68, both of which lead to a chamber 100 formed between the end of the operator boss 66 and a relieved area in the upper surface of the replacement cap 68. This pilot passage is ordinarily stopped by a replacement pilot valve member 102, which fits over the end of the opening 96 that communicates with the relief chamber 94. (emphases added)

Therefore, as clearly shown above, U.S. Patent 5,125,621 discloses only the relief passage and not the vent passage.

For the above reasons, the independent claims 1 and 13 are clearly patentable over U.S. Patent 5,125,621. The other cited prior art also does not disclose the claimed vent passage alone or in combination with the other claimed features.

In summary, independent claims 1 and 13 recite a novel and non-obvious combination of claim elements. The dependent claims recite additional combinations of non-obvious claim elements. Accordingly, all pending claims are in condition for allowance and such action is respectfully requested.

If the Examiner has any questions, or believes a telephone call will aid examination and advance prosecution of the application, he is respectfully invited to call the undersigned representative.

The Commissioner is authorized to apply any charges or credits to the undersigned's Deposit Account 502-196.

Respectfully submitted,



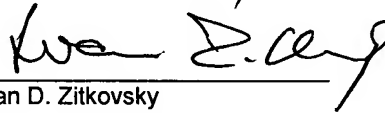
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